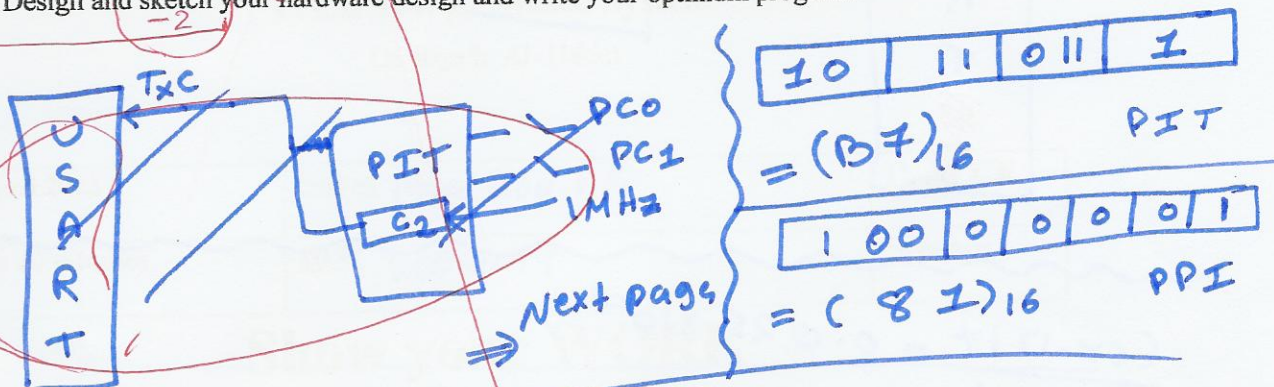


0.2
0.05
0.025

Q2. It is required to drive Tx C pin of a USART with either of the following square wave frequencies (as selected by 2-switches connected to port PC0 and PC1):
 5 kHz, when PC1 PC0 = 00
 10 kHz, when PC1 PC0 = 01
 20 kHz, when PC1 PC0 = 1X
 To be generated by the second counter of the PIT. Assume PIT clock of 1 MHz.
 Design and sketch your hardware design and write your optimum program.



Next page

$N = \text{for } (00) \frac{1\text{MHz}}{5\text{kHz}} = 200$ | $N = \text{for } (1X) \frac{1\text{MHz}}{20\text{kHz}} = 50$
 $N = \text{for } (0001) \frac{1\text{MHz}}{10\text{kHz}} = 100$

~~MOV DX, OFFE6
 MOV AL, 81
 OUT DX, AL
 MOV DX, OFFE4
 IN AL, DX
 AND AL, 03
 CMP AL, 00
 JE DLY5
 CMP AL, 01
 JE DLY10
 CMP AL, 02
 MOV DI, 1
 MOV DX, OFFFF
 MOV~~

MOV DX, OFFE6
 MOV AL, 81
 OUT DX, AL
 MOV DX, OFFE4
 IN AL, DX
 AND AL, 03
 MOV BH, AL
 MOV DX, OFFF
 MOV AL, 0B7
 OUT DX, AL
 ← MOV DX, OFFFD
 CMP BH, 00
 JE FIVE
 CMP BH, 01
 JE TEN
 MOV AL, 50
 OUT DX, AL
 MOV AL, 00
 OUT DX, AL
 HLT

FIVE: MOV AL, 00
 OUT DX, AL
 MOV AL, 02
 OUT DX, AL
 HLT

TEN: MOV AL, 00
 OUT DX, AL
 MOV AL, 01
 OUT DX, AL
 HLT

50
-2